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	expressive with well-chosen vocabulary that enriches the lesson.	clear and correct. Vocabulary is appropriate to students' age and interests.	written language is legible. Both are used correctly. Vocabulary is correct but limited or is not appropriate to students' age or backgrounds.	written language is illegible. Spoken or written language may contain many grammar syntax errors, vocabulary may be inappropriate, vague or used incorrectly leaving students confused.
2. Conveyance of information and ideas	Conveys information and ideas with clarity	Conveys information and ideas with considerable clarity.	Conveys information and ideas with limited clarity.	Presents orally using correct intonation and body language to clarify a message.
<b>E. Assessment of Learning Outcomes</b>	Transforming 4	Developing 3	Emerging 2	Beginning 1
1. Congruence with Instructional Objectives	The assessment is completely congruent with the instructional objectives and key concepts, both in content and process	All the instructional objectives and key concepts are assessed through the proposed plan, but the approach is more suitable to some goals than to others.	Some of the instructional objectives and key concepts are assessed through the proposed approach, but many are not.	Content and methods of assessment lack congruence with instructional objectives and key concepts.
2. Assessing Student Learning	Teacher's plan for student assessment is	Teacher's plan for student assessment is	Teacher's plan for student assessment is	Teacher's approach to assessing

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	fully aligned with the instructional outcomes, with clear criteria and standards that show evidence of student contribution to their development.	aligned with the instructional outcomes, using clear criteria, is appropriate to the needs of students. Teacher intends to use assessment results to plan for future instruction for group of students.	partially aligned with instructional outcomes, without clear criteria and inappropriate for at least some students. Teacher intends to use assessment results to plan for future instruction for the class as a whole.	student learning contains no clear criteria or standards and lacks congruence with the instructional objectives. The results of assessment have minimal impact on the design of future instruction.
<b>F. Reinforcement of Learning</b>	Transforming 4	Developing 3	Emerging 2	Beginning 1
1. Providing Opportunities to Strengthen KPUP	The teacher integrated and carried out the plan for reinforcing learning through well-defined agreement and established connection to next lesson.	The teacher integrated and carried out the plan for reinforcing learning through well-defined task as an agreement and but unable to establish connection to the next lesson.	The teacher integrated agreement in the plan without traces of reinforcing learning and connecting it to the next lesson.	The teacher failed to integrate and carry out the provision for reinforcing learning of the lesson taught.

The number of points attained for each of the fifteen (15) listed components shall be added and then divided by sixty (60). The quotient shall then be multiplied by 0.15 or 15%. The product shall then be multiplied by 100.

Example:

$$\text{Sum of points attained for the 15 components} = 45 \\ [(45/60) \times 0.15] \times 100 = 11.25$$

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Score for Demonstration Teaching = 11.25 / 15 Note: The Score Sheet for the ICT Integration Event

D. ICT INTEGRATION (20 points)		A. Lesson Planning and Preparation (12 points)		B. Classroom Management (16 pts)		C. Teaching Learning Process (20 pts)		E. Language Proficiency(20 pts)		F. Assessment and Reinforcing of Learning (12 pts)		Total 100 pts
Active		Selecting Instructional Objectives		Managing Classroom Procedures		Knowledge of Content and Pedagogy		Use of Language		Congruence with Instructional Objectives		
Collaborative		Mapping Coherent Instruction		Organizing Physical Space		Questioning and Discussion Skills		Conveyance of Information and Ideas		Assessing Student Learning		
Constructive		Instructional Materials		Ability to give instruction		Students' Learning		Diction		Providing Opportunities to Strengthen KPUP		
Authentic				Ability to Lead the Class to Work		Students' Response to Activities		Tone of Voice				
Goal Directed						Learning Activities		Eye contact				
Total												

**Event # 6. SudoKu**

**SUDOKU** is derived from the Japanese words "SUUJIWA DOKUSHI I KAGIRU" which means "the digits must be single" or "the digits are limited to one occurrence."

**Mechanics:**

1. The contest is open for grades 1 to 12. Each participating school will have only one student-contestant in each grade level. The participant should be a bona fide student enrolled in the current school year.
2. There will be three elimination rounds:

**Round 1 – EASY ROUND (15 minutes)** Each contestant will solve one SuDoKu Easy Level. Only the top 7 contestants can proceed to Round 2. No tie breaker in case of tie.

**Round 2 – AVERAGE ROUND (30 minutes)** The top 7 will solve one SuDoKu Average Level. Only the top 5 contestants can proceed to Round 3. No tie breaker in case of tie.

**Round 3 – DIFFICULT ROUND (40 minutes)** The top 5 contestants will solve only one SuDoKu Difficult Level. Each contestant will be ranked according to the time consumed in the puzzle. Only the Top 3 shall be declared as winners.

3. The SuDoKu grid will be provided during the contest proper by the Regional Math Olympics Committee.
4. The time starts immediately after the contest administrator announces the GO signal.
5. The contestants shall immediately submit their solved SuDoKu and the contest administrator will record the time consumed for each contestant. Once recorded,

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submitted answered Sudoku will be considered final and the contestant is not allowed to make any further changes.

6. The timekeeper says "STOP" as the time allotted to solve the puzzle in each round expires. Contestants who failed to solve the puzzle within the given time must submit their output to the contest administrator right after the STOP signal has been announced.
7. Puzzles with the wrong solution but submitted ahead of the time limit and puzzles that remain unsolved after the time limit expires will all be subject to a point system. The point system shall be done by checking the number entry in each system. The point system shall be done by checking the number entry in each blank cell of the puzzle and counting the number of correct answers. Each correct entry in the box corresponds to one point. The point system shall only be applied to fill in vacant slots of qualifiers for the next round. Contestants with higher points will complete the list of qualifiers.
8. The SuDoKu puzzle is said to be solved after filling all the subgrids, each with the numbers 1 to 9 in proper arrangements. Each row and column contains the numbers 1 to 9.
9. Numbers written whether in pencil or ball pen and in whatever sizes shall be deemed final and constitute an answer of the puzzle grids. Each box must have only one number entry. Erasures are allowed as long as the final answer is clear and will not confuse the checker.
10. Winners will be determined through the consumed time in solving the SuDoKu puzzle or/and by a point system. Any contestant who has consumed the least time in solving the puzzle in the final round will be declared the winner. In case when no top 3 finishers have been declared before the time limit in the final round, the point system will determine the winners. In case of a tie in the final round, tie-breaker will be done through the following:
  - a. least sum of ranks in three rounds between contestants involved in the tie
  - b. cumulative time recorded after three rounds (non-time-beater contestant in a round will use the time limit as his/her recorded time plus 5 seconds for every incorrect data entry); or apply tie-breaking rules in Rubik's cube contest. (we may exclude this).
11. The decision of the contest administrator/s is official and final.

### Event # 7. Damath

\*Basically the rules in playing the Filipino checkboard game dama will be used with some modifications in integrating Mathematics as follows:

1. One contestant in every school is allowed in the following grade level:  
Grade 3 and 4 - Whole Numbers  
Grade 5 and 6 - Fractions

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Grade 7- Integers

Grade 8- Rational Numbers

Grade 9- Radicals

Grade 10- Polynomials

SHS - Binary

2. Set the starting positions of the chips.
3. After the starting positions of the chips have been set, the first player is determined by tossing a coin.
4. A chip is allowed to move diagonally forward only to an adjoining vacant square.
5. A chip has to take the opponent's chip diagonally forward or backward, thus 'pass' is not allowed. Mathematical operations (+, -, x, ÷) will be used depending on the vacant square's operation symbol where the 'taker' chip lands by jumping over the 'taken' chip (the latter chip has to be removed from the board after performing the indicated mathematical operation and recording same in the score sheet).
6. After making a move, a player shall record his/her move in the score sheet.
7. Only one score sheet will be used by the players in a game.
8. Each player is allowed one minute to move, record the move, and write the score on the score sheet.
9. A warning is given to a player by the arbiter if no move is made in one minute, and consequently, is forced to move a chip.
10. Continuous violation of rule # 7 will mean disqualification (after 3 warnings) of the player even if he/she is leading in the score sheet.
11. In taking more than one chip, the 'taker' chip is always the addend, minuend, multiplicand, or dividend as the case may be.
12. In taking a chip or more than one chip, the dama rules on 'dama', 'mayor dalawa or tatlo', 'mayor tatlo over dalawa', mayor dama and mayor dalawa or tatlo over dama prevail.
13. A chip is declared 'dama' upon reaching the terminally on the following designated squares.

For red chips: (0,7)	(2,7)	(4,7)	(6,7)
For blue chips: (1,0)	(3,0)	(5,0)	(7,0)
14. The "Dama" chip should be encircled in the score sheet to identify the "dama".
15. A 'dama' chip is allowed to take a chip or more than one chip or move to any unoccupied square along its diagonal path. Moreover, a dama's score is doubled if taking a chip or chips and quadrupled if it takes the opponent's dama chip. Similarly, an ordinary chip's score is doubled if it takes a dama chip.

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16. A 'move' {e.g. 2 → 6,3} is good only at the most for one (1) minute including its corresponding entries in the score sheet; while the game's duration is twenty (20) minutes.

17. The game ends when any of the following situations occur:

- If no show of one player is declared after ten minutes
- Repetitive moves of any or both players
- A player resigns
- A player's chip is cornered
- A player has no more chip to move
- The 20-minute game duration ended

18. The remaining chips have to be added to the respective player's total scores.

19. The player with the greater total in Damaths is declared the winner for which he/she is entitled to one (1) point in the tally sheets of contestants.

20. Only one score sheet is allowed to be accomplished alternately by the two players whereby for incorrect entries in the score sheet, a player has to immediately call the attention of the competition facilitator by raising one's hand, that is, after stopping the time. As determined by the said facilitator, the appropriate corrections will be done by the erring player in as much as the facilitator's decision is final and unappealable.

**CHIPS and Position in the Damath Board:**

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**Starting Positions of the Damath chips**

**Grade 7 (Integer Damaths)**

-9	6	-1	4
0	-3	10	-7
-11	8	-5	2

**Grade 8 (Rational Damaths)**

-9/10	6/10	-1/10	4/10
0	-3/10	10/10	-7/10
-11/10	8/10	-5/10	2/10

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## Grade 9 (Radical Damaths)

$$9\sqrt{2}$$

$$\sqrt{8}$$

$$4\sqrt{18}$$

$$16\sqrt{32}$$

$$-49\sqrt{8}$$

$$-25\sqrt{18}$$

$$36\sqrt{32}$$

$$64\sqrt{2}$$

$$-121\sqrt{18}$$

$$-81\sqrt{32}$$

$$100\sqrt{2}$$

$$144\sqrt{8}$$

## Grade 10 (Polynomial Damaths)

$$-3x^2y$$

$$-xy^2$$

$$6x$$

$$10y$$

$$-21xy^2$$

$$\cancel{-15x}$$

$$28y$$

$$36x^2y$$

$$-55x$$

$$-45y$$

$$66x^2y$$

$$78xy^2$$

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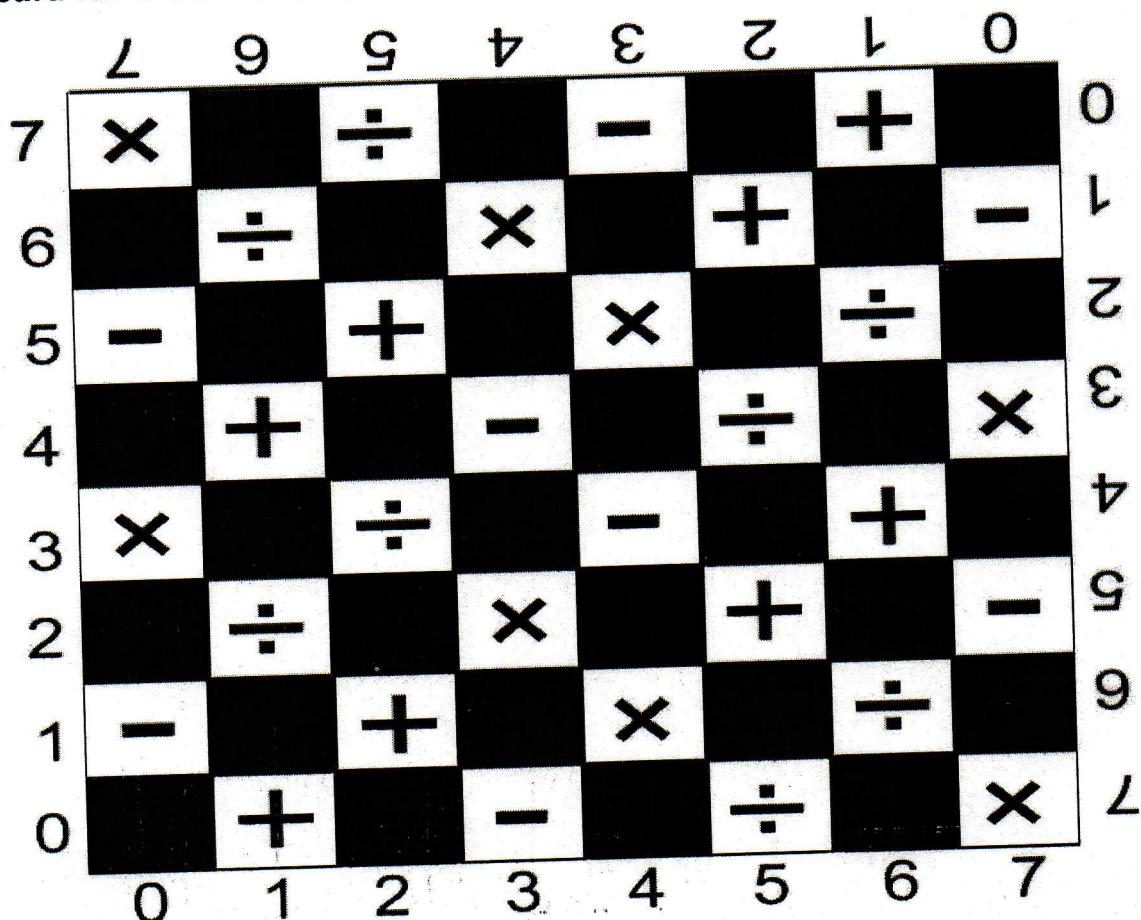


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**Damath Board for Grade 10 Only**



**Damath board for Grades 3 to 7, Grade 8 and Grade 9**

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0	1	2	3	4	5	6	7	7	6	5	4	3	2	1	0
0	X		÷		-		+								
1		÷		X		+									
2	-		+		X			÷							
3		+		-			÷					X			
4	X		÷		-							+			
5												÷			
6															
7															

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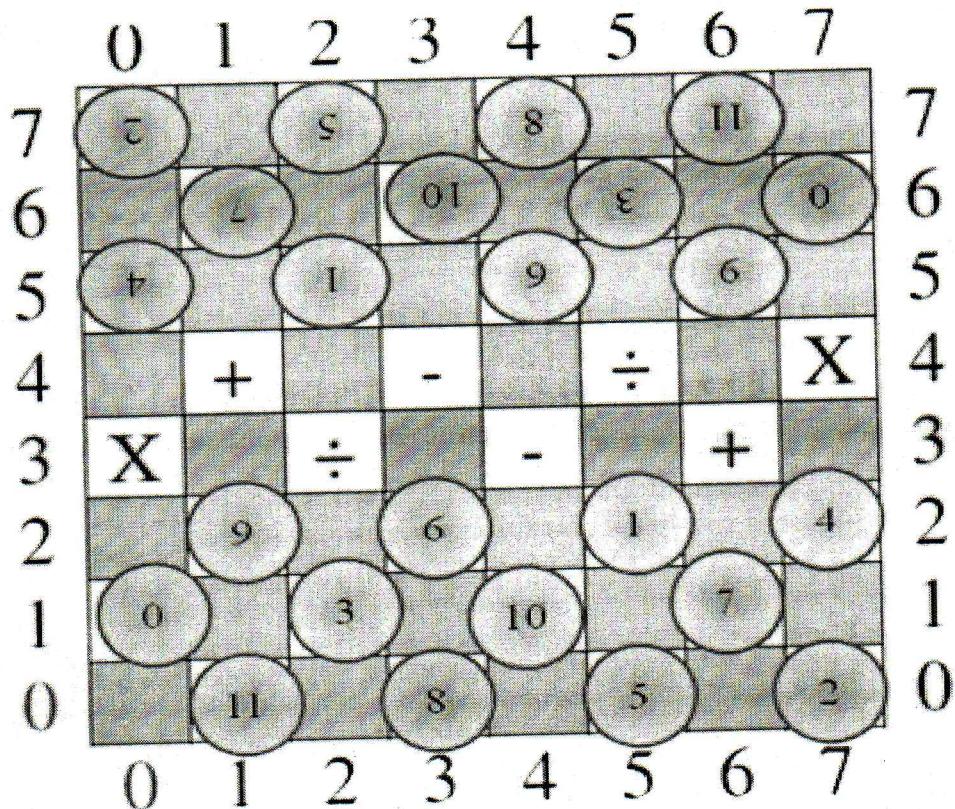


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**Grade III and IV – WHOLE DAMATH**



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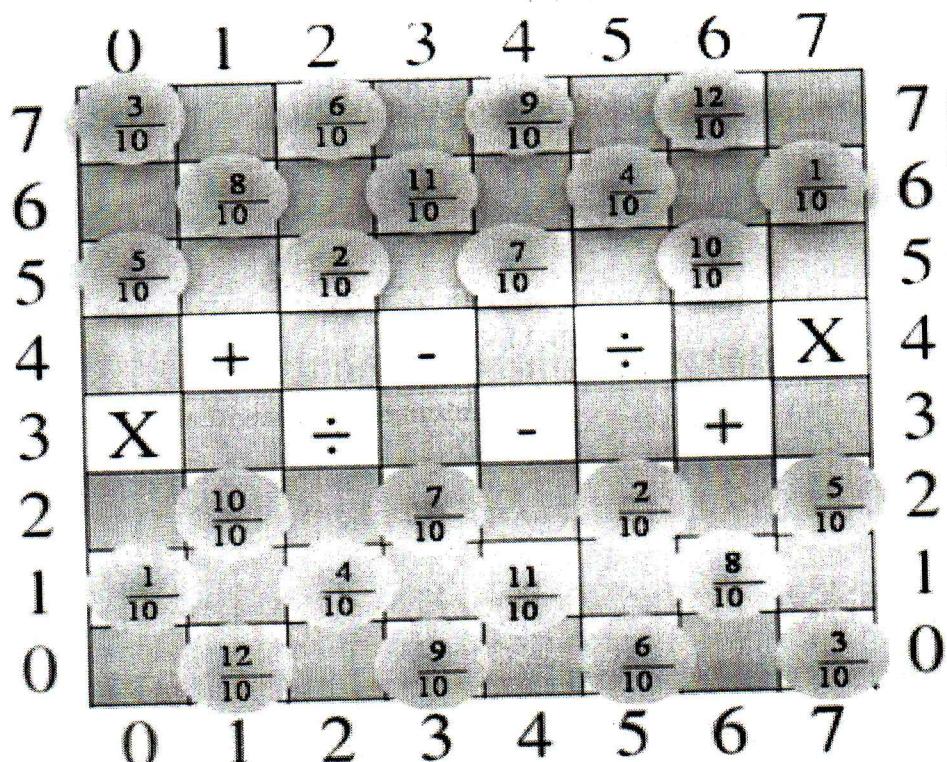
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**Grade V and VI – FRACTION DAMATH**



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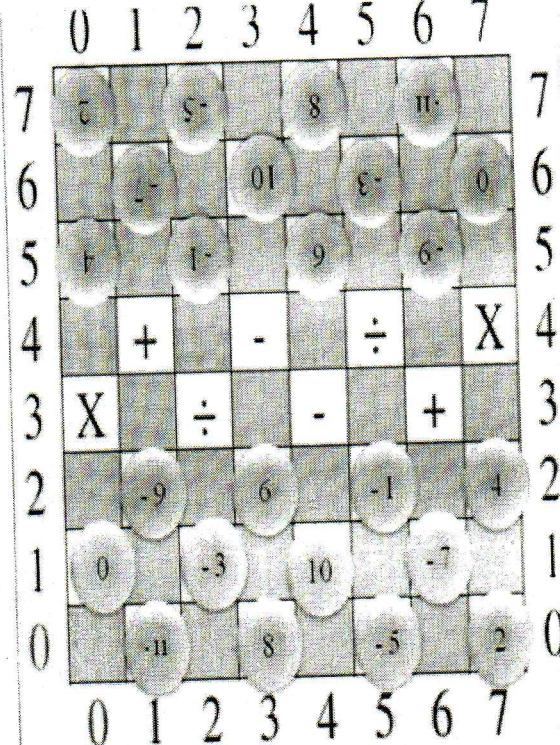
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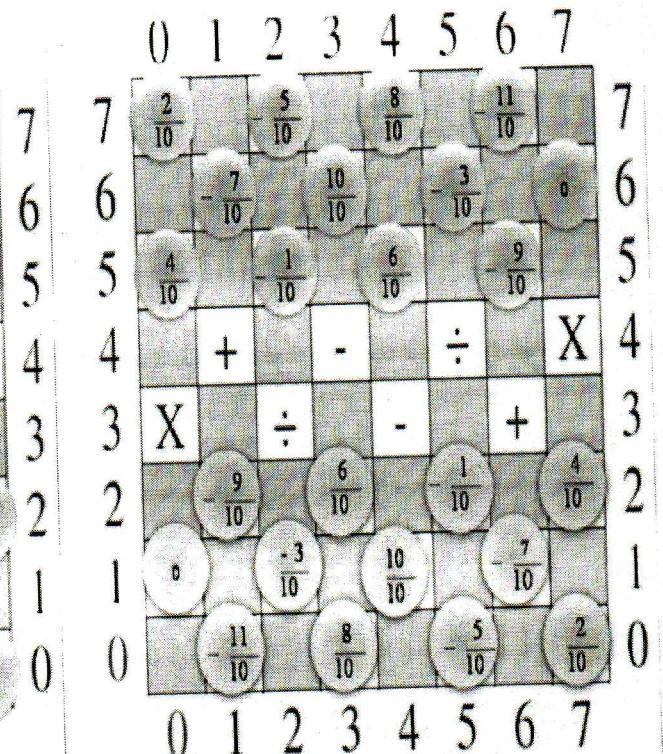
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**SECONDARY LEVEL**

Grade 7 - INTEGER DAMATH



GRADE 8 - RATIONAL DAMATH



For more information on the game, visit [www.damath.com](http://www.damath.com)

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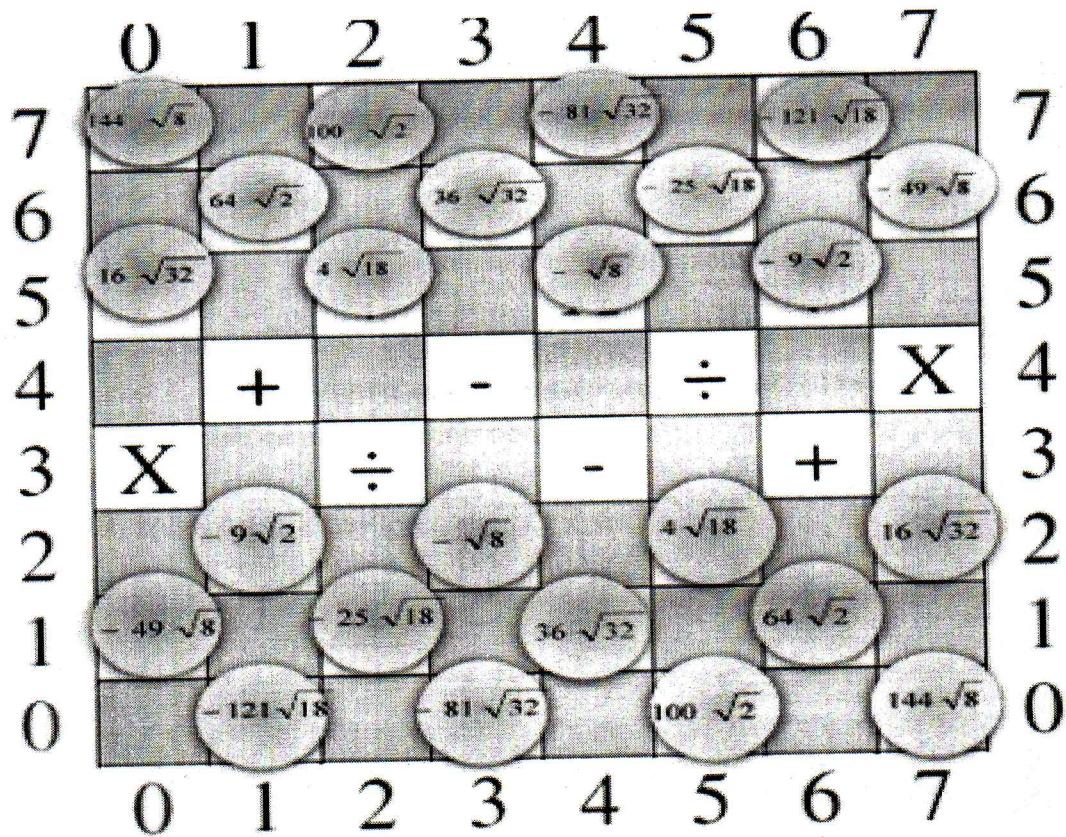


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**GRADE 9 – RADICAL DAMATH**



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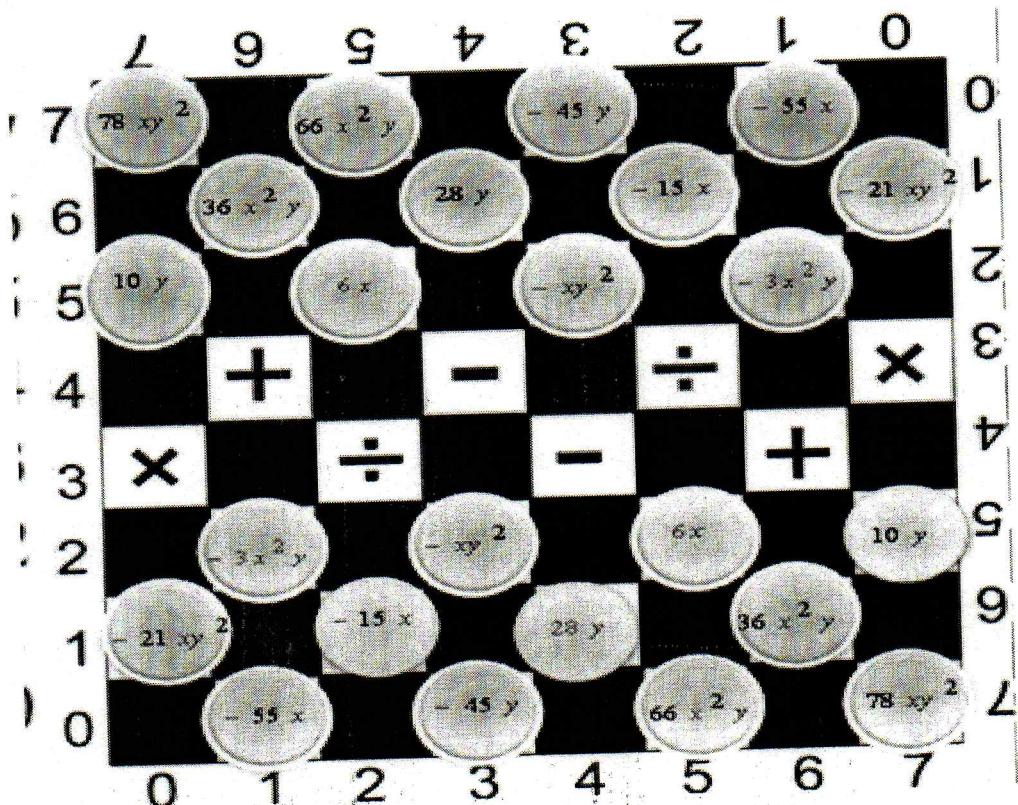


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**GRADE 10 – POLYNOMIAL DAMATH**



**SENIOR HIGH SCHOOL- BINARY DAMATH**

How to Play Binary Damath?

Set the starting position of the chips as follows:

Red Chip Player whole nos. "blue chip" player, "red chip" player

0 (1,2) (6,5)	1 0 1 0 1 (3,2) (4,5)
0 1 0 1 0 (5,2) (2,5)	1 0 1 0 1 (7,2) (0,5)
1 (0,1) (7,6)	0 (2,1) (5,6)
0 1 0 1 1 (4,1) (3,6)	1 0 1 0 0 (6,1) (1,6)
0 1 0 1 0 (1,0) (6,7)	1 (3,0) (4,7)
" blue Chip " Player 0 (5,0) (2,7)	1 (7,0) (0,7)

Toss a coin to determine which player will have the first "move"

Moving a chip means sliding it diagonally in the forward direction only except when taking an opponent's chip or if a "dama" chip takes an opponent's chip,

The two players alternately take turns in moving a chip (pass is not allowed).

A player who touches a chip (touch move) is required to move unless it is not possible to do so.

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After each 'move' a player has to record his/her 'move' in a scoresheet (only one scoresheet will be used by the two players).

Each player is allotted one minute per 'move' including the recording of the 'move' and the corresponding score in the scoresheet. In as much as taking a chip or chips is mandatory, then the one-minute per 'move' does not apply in this situation.

In taking an opponent's chip, the 'taker' chip jumps over the 'taken' chip and uses any of the four operation symbols of +, -, x and ÷ where the taker chips lands.

A chip is declared 'dama' if it stops in any of the following squares of the opposing player: (1,0) (3,0) (5,0) (7,0). Similarly, the opposing player's chip is declared 'dama' if it stops in any of the following squares (0,7) (2,7) (4,7) (6,7).

A dama chip can slide diagonally forward or backward in any unoccupied square as long as no opponent's chip blocks its path. It could take a chip or chips whereby its corresponding sum, difference, product or quotient is doubled. Similarly, if an ordinary chip takes an opponent's 'dama' chip takes an opponent's dama chip, then its score is quadrupled.

A 'taker' chip can take one chip or more than one chips with the required option to take the greater number of chips.

Between a dama chip taking an opponent's chip and a chip taking an opponent's chip the former prevails.

A taker or taken dama chip should be identified by encircling it in the scoresheet.

The game ends if:

the 20-minute game period lapsed;

the moves are repetitive;

a player has no more chip to move;

an opponent's chip is cornered

The remaining chip or chips of the player are to be added to their respective scores. If the remaining chip is a 'dama', then its score is also doubled.

The player with the greater accumulated total score wins the game.

### Damath Disqualifications: 1 technical

#### 1. 3 warnings = 1 technical

#### Grounds for warning:

- wrong arrangement of chips
- wrong entry in the score sheet
- move exceed in one minute

**Note: Move first before writing entry in the score sheet:**

#### Official Score Sheet:

Move/Operation	Score	Running Score

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### Event # 8. Quiz Bee

#### MATH QUIZ BEE (INDIVIDUAL)

1. The Quiz Bee is for all bona fide Grade 1 to 12 students. Each school will have two contestants in every grade level.
2. The 30-item test will be given in written form with no choices for one (1) hour and fifteen (15) minutes. Answers must be written in the space before the item number. The coverage of the test will be based in the grade level competencies provided in the 2016 K to 12 Curriculum Guide and MATATAG Curriculum. The language to be used in the test is English.
3. Answers must be given with complete units and to the required accuracy. However, if the unit is already given in the way the question is asked, it need not be given in the answer.
4. The proctors will collect the test questions as soon as the time ends.
5. The proctors will check the test papers of each participant. Each correct answer will gain one point. A wrong answer will not be given a point.
6. The contestants will be ranked according to their total score in the written test to determine the winners.
7. In case of a tie, in the 1<sup>st</sup>, second, third, fourth or fifth rank: a tie breaker question/s at a time shall be given.

#### Tie Breaker Question/s

1. A prepared tiebreaker question/s will be read by the quiz bee facilitator which will be answered by the contestant on a sheet of paper. The contestant can write his/her answer anytime, while the question is being read or after by the quiz bee facilitator. The question will be read twice only. Whoever submits the correct answer first, wins. In cases of 'nobody got the correct answer' the same process will be done until one of the contestants has given the correct answer first.
8. For complaints and clarifications; only the official contestants may raise a complaint or clarification to the test administrators/chairman.

### Event # 9. Mental Mathematics

This competition will follow the conduct of a mental quiz show shown on television.

Category A. Elementary Level:

**Competency: Add and subtract 2-digit numbers.**

Category B. Junior High School

**Competency: Four operations on fractions.**

Category C. Senior High School

**Competency: Four operations on fractions.**

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#### General Mechanics:

1. One contestant in every school in every year level of each category is allowed.
2. One set of computations/problems per Slide will be shown. Ten sets of calculations/problems to be solved/calculated will be given in the Mental Math Contest.
3. Each contestant will be provided with a flash board where the correct answer to the given problem/calculation will be written.
4. As soon as the problem is flashed the contestant will begin solving/calculating mentally. Solving on air or in a piece of paper is not allowed. However, unique gestures of the participants in getting the correct answer/s are allowed. A corresponding time limit will be announced by the quiz master before a problem is flashed in a power point presentation. The problem will be continuously shown, until a final answer will be required. (Example for elementary:  $23+36+45-20+90-21 = \underline{\quad} \underline{\quad}$ ) Example for Secondary:  $(1/2+3/4 \times 3/7+1/4 = \underline{\quad})$  No specific numbers of addends, subtrahends or minuend, factors, or divisors will be given). The answer of the contestant must be written on the flash board clearly, as soon as the quiz master asked them to write their answer. When the "RAISE YOUR FLASH BOARD" is heard by the contestant each will raise their flash board. Answers not clearly written are considered wrong. A participant who got the wrong answer will immediately be eliminated and loose a turn. Only contestants with the correct answer/s will advance to the next set of calculations.
5. The first, second, and third placers will be ranked according to the most number of correct answers. In case of a tie in these places, a tie breaker computation will be given.
6. The contestant who gathered the highest score in each category wins in the Competition and is to be awarded with a trophy as "Mental Math Champion of Math Olympics 2024."
7. The second and Third placers will be given a medal and certificate of recognition.

### Event # 10. Math History Quiz Bee

1. The Math History Quiz Bee is for all bona fide Grade 1 to 12 students. Each school will have two contestants in every grade level.
2. There shall be one phase only.
3. A 30-item test will be given in written form for one (1) hour.
5. At the end of the Round, winners shall be identified as the top 5 highest scorers and shall be awarded medals and certificate
7. In case of a tie, in the 1<sup>st</sup>, second, third, fourth, or fifth rank: a tie breaker question/s at a time shall be given.

#### Tie Breaker Question/s

1. A prepared tiebreaker question/s will be read by the quiz bee facilitator which the contestant will answer on a sheet of paper. The contestant can write his/her answer anytime, while the question is being read or after by the quiz bee facilitator. The question will be read twice only. Whoever submits the correct answer first, wins. In cases of

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'nobody got the correct answer" the same process will be done until one of the contestants has given the correct answer first.

8. For complaints and clarifications; only the official contestants may raise a complaint or clarification to the test administrators/chairman.

**CAROLYN M. ARADO**

Education Program Supervisor, Mathematics  
Panabo City Division

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